AMENDMENTS TO THE CLAIMS

Please amend claims 1, 19, and 23 as follows:

1. (Currently Amended) In a processing satellite communications system including at least one processing satellite having a receiver and a transmitter for respectively receiving and transmitting a data cell, a method for virtual path switching of said data cell, the method comprising:

receiving a data cell at one of a plurality of input ports of a processing satellite, said data cell including an assigned virtual path identifier (VPI) associated with a destination output port;

examining ~~an~~ said assigned ~~virtual path identifier (VPI)~~ VPI in said data cell to determine ~~a~~ said destination output port associated with said assigned VPI; and

transferring said data cell to said destination output port associated with ~~based on~~ said assigned VPI.

2. (Original) The method for virtual path switching of claim 1 comprising associating said destination output port with a crosslink to another processing satellite.

3. (Original) The method for virtual path switching of claim 1 further comprising:

establishing a set of VPIs wherein each VPI is uniquely associated with a single output port on said processing satellite;

establishing a set of virtual channel identifiers (VCIs);

assigning said assigned VPI from said set of VCIs and a VCI from said set of VCIs to said data cell; and

transmitting said data cell to said processing satellite.

4. (Original) The method for virtual path switching of claim 1 further comprising:

establishing at least one control subfield indicating a distinct treatment for data cells;

dividing said assigned VPI into a control subfield and a routing subfield.

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5. (Original) The method for virtual path switching of claim 4 wherein said examining step comprises examining said routing subfield to determine said destination output port.

6. (Original) The method for virtual path switching of claim 5 further comprising examining said control subfield to determine a level of error control for said data cell.

7. (Original) The method for virtual path switching of claim 5 further comprising examining said control subfield to determine a level of output queuing priority for said data cell.

8. (Original) The method for virtual path switching of claim 1 further comprising:

providing at least one multicast module on said processing satellite wherein said multicast module is associated with one multicast output port; and

providing at least one multicast routing table having memory locations storing addressing information.

9. (Original) The method for virtual path switching of claim 8 further comprising:

establishing a set of VPIs wherein each VPI is uniquely associated with a single output port on said processing satellite, and wherein at least one of said VPIs is a multicast VPI uniquely associated with said multicast output port; and

establishing a set of VCIs.

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10. (Original) The method for virtual path switching of claim 9 further comprising assigning said multicast VPI to said data cell, and assigning a VCI from said set of VCIs to said data cell.

11. (Original) The method for virtual path switching of claim 10 wherein said transferring step comprises transferring said data cell to said multicast output port uniquely associated with said assigned multicast VPI.

12. (Previously Presented) In a processing satellite communications system including at least one processing satellite having a receiver and a transmitter for respectively receiving and transmitting a data cell, a method for virtual path switching of said data cell, the method comprising:

receiving a data cell at one of a plurality of input ports of said processing satellite;

examining an assigned virtual path identifier (VPI) in said data cell to determine a destination output port associated with said assigned VPI;

transferring said data cell to said destination output port;

providing at least one multicast module on said processing satellite wherein said multicast module is associated with one multicast output port;

providing at least one multicast routing table having memory locations storing addressing information;

establishing a set of VPIs wherein each VPI is uniquely associated with a single output port on said processing satellite, and wherein at least one of said VPIs is a multicast VPI uniquely associated with said multicast output port;

establishing a set of VCIs;

B1 assigning said multicast VPI to said data cell, wherein said transferring step comprises transferring said data cell to said multicast output port uniquely associated with said assigned multicast VPI;

assigning a VCI from said set of VCIs to said data cell;

receiving said data cell by said multicast module associated with said multicast output port;

examining said assigned VCI to determine a multicast group of VPIs from said set of VPIs;

reproducing said data cell to create a predetermined number of reproduced data cells; and

reassigning each of said reproduced data cells with a new VPI from said multicast group of VPIs.

13. (Original) The method for virtual path switching of claim 12 wherein said examining step comprises indexing a memory storing said multicast group of VPIs.

14. (Original) The method for virtual path switching of claim 13 comprising:

receiving each of said reproduced data cells from said multicast module at one of said input ports;

examining each of said reassigned VPIs to determine a new output port corresponding to each of said reassigned VPIs; and

transferring each of said reproduced data cells to said new output port corresponding to each of said reassigned VPIs.

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15. (Original) The method for virtual path switching of claim 14 wherein said reproducing step comprises creating at least as many reproduced data cells as there are distinct VPIs in said multicast group of VPIs.

16. (Original) The method for virtual path switching of claim 14 further comprising reassigning the VCI of least one of said reproduced data cells.

17. (Previously Presented) In a processing satellite communications system including at least one processing satellite having a receiver and a transmitter for respectively receiving and transmitting a data cell, a method for virtual path switching of said data cell, the method comprising:

receiving a data cell at one of a plurality of input ports of [said] a processing satellite;

examining an assigned virtual path identifier (VPI) in said data cell to determine a destination output port associated with said assigned VPI;

transferring said data cell to said destination output port;

establishing a set of VPIs wherein each VPI is uniquely associated with a single output port on said processing satellite;

establishing a set of virtual channel identifiers (VCIs);

assigning said assigned VPI from said set of VPIs and a VCI from said set of VCIs to said data cell; and

transmitting said data cell to said processing satellite;

wherein said step of assigning comprising assigning an externally managed VPI and an externally managed VCI, and wherein said step of examining comprises examining said assigned externally managed VPI in said data cell to determine a destination output port associated with said assigned externally managed VPI.

18. (Original) The method for virtual path switching of claim 17 further comprising:

providing at least one input routing table having memory locations storing routing tags, wherein said examining step further comprises examining said assigned externally managed VPI to determine a memory location in said at least one input routing table; and

transferring said data cell to an output port represented by the routing tag contained in said memory location.

19. (Current Amended) In a processing satellite communications system including at least one processing satellite having a receiver and a transmitter for respectively receiving and transmitting a data cell, a method for expanded address virtual path switching of said data cell, the method comprising:

receiving a data cell at one of a plurality of input ports of a processing satellite, said data cell including an assigned virtual path identifier (VPI) associated with a destination output port;

examining said assigned VPI ~~an assigned virtual path identifier (VPI)~~ in said data cell to determine said ~~a~~ destination output port associated with said assigned VPI;

attaching a selected routing tag to said data cell based on said assigned VPI, said routing tag identifying a next virtual channel link, wherein said assigned VPI is unchanged for each virtual channel link in a virtual connection; and

B1 transferring said data cell to said destination output port based on said assigned VPI.

20. (Original) The method for virtual path switching of claim 19 further comprising:

assigning said assigned VPI to said data cell; and

assigning a virtual channel identifier (VCI) to said data cell.

21. (Previously Presented) In a processing satellite communications system including at least one processing satellite having a receiver and a transmitter for respectively receiving and transmitting a data cell, a method for expanded address virtual path switching of said data cell, the method comprising:

receiving a data cell at one of a plurality of input ports of a processing satellite;

examining an assigned virtual path identifier (VPI) in said data cell to determine a destination output port;

attaching a selected routing tag to said data cell, said routing tag identifying a next virtual channel link;

transferring said data cell to said destination output port;

assigning said assigned VPI to said data cell;

assigning a virtual channel identifier (VCI) to said data cell;

establishing at least two VPIs corresponding to a single output port; and

establishing a set of VCIs.

22. (Original) The method for virtual path switching of claim 19 further comprising storing routing tags in an input routing table, and wherein said step of examining further comprises determining said selected routing tag.

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23. (Currently Amended) An apparatus for path switching a data cell to a satellite output port for transmission in a downlink, the apparatus comprising:

an input module comprising a plurality of input ports;

an output module comprising a plurality of output ports, each of said plurality of output ports associated with a virtual path identifier (VPI); and

circuitry responsive to address bits in a data cell and to an assignment of said address bits to said output ports based on an assigned VPI ~~virtual path identifier (VPI)~~ in said data cell, for coupling said data cell to at least one of said output ports, wherein said VPI is used to route said data cell to at least one of said output ports.

24. (Original) The apparatus for path switching of claim 23 wherein said data cell is an ATM cell.

25. (Original) The apparatus for path switching of claim 23 further comprising an examining circuit for examining a virtual path identifier (VPI) in said data cell.

26. (Original) The apparatus for path switching of claim 23 wherein said address bits include at least a portion of a virtual path identified (VPI).

27. (Original) The apparatus for path switching of claim 26 wherein said address bits further include at least a portion of a virtual channel identifier (VCI).

28. (Previously Presented) An apparatus for path switching a data cell to a satellite output port for transmission in a downlink, the apparatus comprising:

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an input module comprising a plurality of input ports;

an output module comprising a plurality of output ports; and

circuitry responsive to address bits in a data cell and to an assignment of said address bits to said output ports, for coupling said data cell to at least one of said output ports, said address bits include at least a portion of a virtual path identifier (VPI), said assignment includes an assignment of an output port associated with at least two VPIs.

29. (Original) The apparatus for path switching of claim 23 wherein said circuitry is further responsive to a control subfield and a routing subfield, said control subfield indicating special treatment of said data cell.

30. (Original) The apparatus for path switching of claim 23 further comprising at least one multicast module connected between said input module and said output module.

31. (Original) The apparatus for path switching of claim 30 further comprising at least one multicast routing table connected to said multicast module, said multicast routing table containing multicast group information.

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32. (Original) The apparatus for path switching of claim 23 wherein at least one of said output ports is associated with a crosslink to another processing satellite.